

What is claimed is:

CLAIM 1. A piezo-electric in vivo insertable device comprising:

- a) a piezo-electric material in a tubular shape having an interior surface and an exterior surface;
- b) at least one inside electrode on said interior surface of said piezo-electric material;
- c) at least one outside electrode on said exterior surface of said piezo-electric material.

CLAIM 2. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said at least one inside electrode covers said interior surface of said piezo-electric material.

CLAIM 3. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said at least one inside electrode is a plurality of electrodes having inconsistent polarity among the plurality of electrodes.

CLAIM 4. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said at least one outside electrode covers said exterior surface of said piezo-electric material.

CLAIM 5. A piezo-electric in vivo insertable device as claimed in claim 3 wherein said at least one outside electrode is a plurality of electrodes having inconsistent polarity among the plurality of electrodes.

CLAIM 6. A piezo-electric in vivo insertable device as claimed in claim 5 wherein said plurality of inside electrodes are each paired with one of said plurality of outside electrodes.

CLAIM 7. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said piezo-electric material is radially polarized.

CLAIM 8. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said piezo-electric material is uniformly perpendicularly polarized.

CLAIM 9. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said at least one of said at last one inside electrode and said at least one outside electrode is an insulated electrode.

CLAIM 10. A piezo-electric in vivo insertable device as claimed in claim 9 wherein said insulated electrode is a positive electrode.

CLAIM 11. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said at least one inside electrode and said at least one outside electrode are insulated electrodes.

CLAIM 12. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said insertable device is a stent.

CLAIM 13. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said device is a capillary tube.

CLAIM 14. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said device vibrates at a frequency in the range of about 500 Hz to about 80 kHz and with a wavelength of in the range of about 1/2 mm to about 1 cm.

CLAIM 15. A piezo-electric in vivo insertable device as claimed in claim 1 wherein said device further includes a power source.

CLAIM 16. A piezo-electric in vivo insertable device as claimed in claim 15 wherein said source is mobile.

CLAIM 17. A piezo-electric in vivo insertable device as claimed in claim 15 wherein said source is stationary.

CLAIM 18. A method for reducing encrustation of an in vivo insertable tube comprising;

- a) inserting the device of claim 1 into a target position in a body;
- b) supplying power to said tube causing said tube to vibrate.

CLAIM 19. A method for reducing encrustation of an in vivo insertable tube as claimed in claim 18 wherein said power is supplied by a stationary supplier.

CLAIM 20. A method for reducing encrustation of an in vivo insertable tube as claimed in claim 18 wherein said power is supplied by a mobile supplier.

CLAIM 21. A method for treating bodily concretions in vivo comprising;

- a) inserting the device of claim 1 into a target position in a body;
- b) causing said device to vibrate;
- c) leaving said device in place in vivo for a period of time.

CLAIM 22. A method for treating bodily concretions in vivo as claimed in claim 21 wherein said method further includes removing said tube from the body.

CLAIM 23. A method for treating bodily concretions in vivo as claimed in claim 21 wherein said vibrations are transmitted directly to a stone in contact with said device.

CLAIM 24. A method for treating bodily concretions in vivo as claimed in claim 21 wherein said vibrations are transmitted through bodily fluid to a stone spaced from said device.